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SOUTHERN CAT-TAIL (*TYPHA DOMINGENSIS*, TYPHACEAE) DISCOVERED IN OHIO

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ABSTRACT

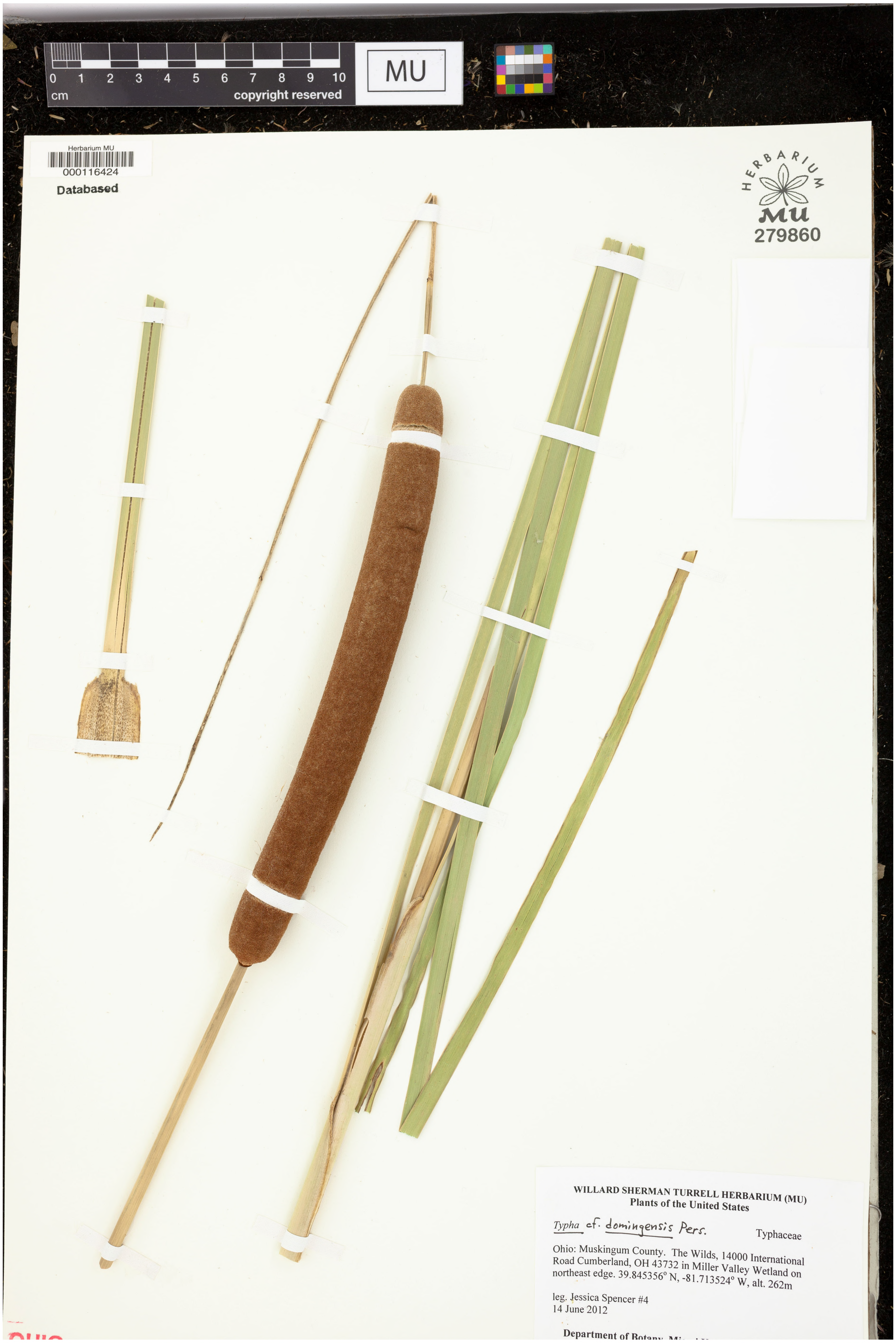
Southern cat-tail, *Typha domingensis* is reported for the first time from Ohio. The population, growing with *Typha angustifolia*, *T. latifolia*, and hybrids among all three species, was found at a site in Muskingum County in the southeastern part of the state.

KEY WORDS: *Typha domingensis*, *Typha angustifolia*, *Typha latifolia*, hybrids, Ohio

The southern cat-tail, *Typha domingensis*, was first described by Christiaan Henrik Persoon in his *Synopsis plantarum* (1807), from specimens found in Santo Domingo, Dominican Republic (Fig. 3). The historical range of *T. domingensis* is thought to include tropical and warm-temperate areas of the New World; it has spread to tropical and subtropical areas throughout the globe, including Africa, Asia, and the Pacific region (Smith 2000). In the USA, the species now ranges from Florida (where it is widespread [Wunderlin & Hansen 2008]), Georgia, Mississippi, Alabama, and Texas in the Southeast, north as far as Delaware, Kentucky, and Illinois, and west through New Mexico, Arizona, Utah, and California. It has been reported from Kansas, Nebraska,, and Wyoming, though in these states it is seemingly rare (Hotchkiss & Dozier 1949; Smith 2000; USDA, NRCS 2013). It is found between 0–2000 meters in elevation, in wetlands of fresh or slightly brackish water (Smith 2000).

Southern cat-tail has previously been unknown in Ohio, where it was discovered in a mixed cat-tail population in Muskingum County in southeastern Ohio, with *Typha angustifolia* L., *T. latifolia* L., and an apparent hybrid swarm involving all three species. In August 2012, *T. domingensis* (Fig. 1), along with the other cat-tail species, was collected in the Miller Valley Wetland located at The Wilds (Fig. 2). The 54.7 acre wetland is an emergent marsh that sits at 262 meters elevation and is surrounded by previously mined land. The 20 acre portion of the wetland in which *T. domingensis* was found is undergoing restoration, which began in 2010. Since no known populations of the species exist in the surrounding counties it is difficult to explain how it arrived, but climate and growing conditions may not be limiting factors in its continued spread.

Voucher. Ohio. Muskingum Co.: Cumberland, The Wilds, Miller Valley Wetland, 15 Aug 2012 *J.M. Spencer 4* (MU).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WILLARD SHERMAN TURRELL HERBARIUM (MU)
Plants of the United States

Typha cf. domingensis Pers. Typhaceae

Ohio: Muskingum County. The Wilds, 14000 International Road Cumberland, OH 43732 in Miller Valley Wetland on northeast edge. 39.845356° N, -81.713524° W, alt. 262m

leg. Jessica Spencer #4
14 June 2012

Department of Botany

Figure 1. *Typha domingensis*. Specimen from Muskingum Co., Ohio (*J. Spencer 4*, MU).

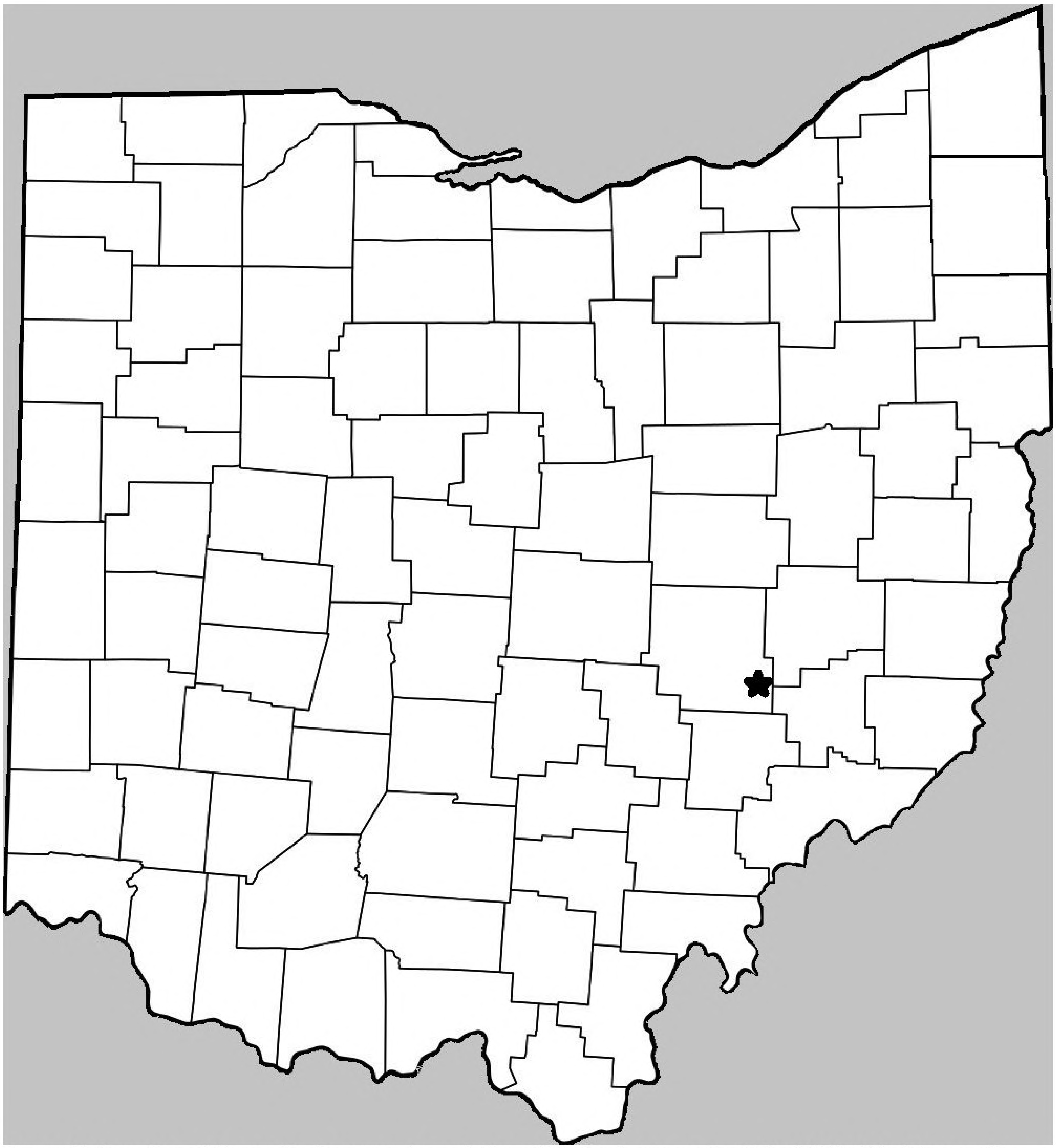
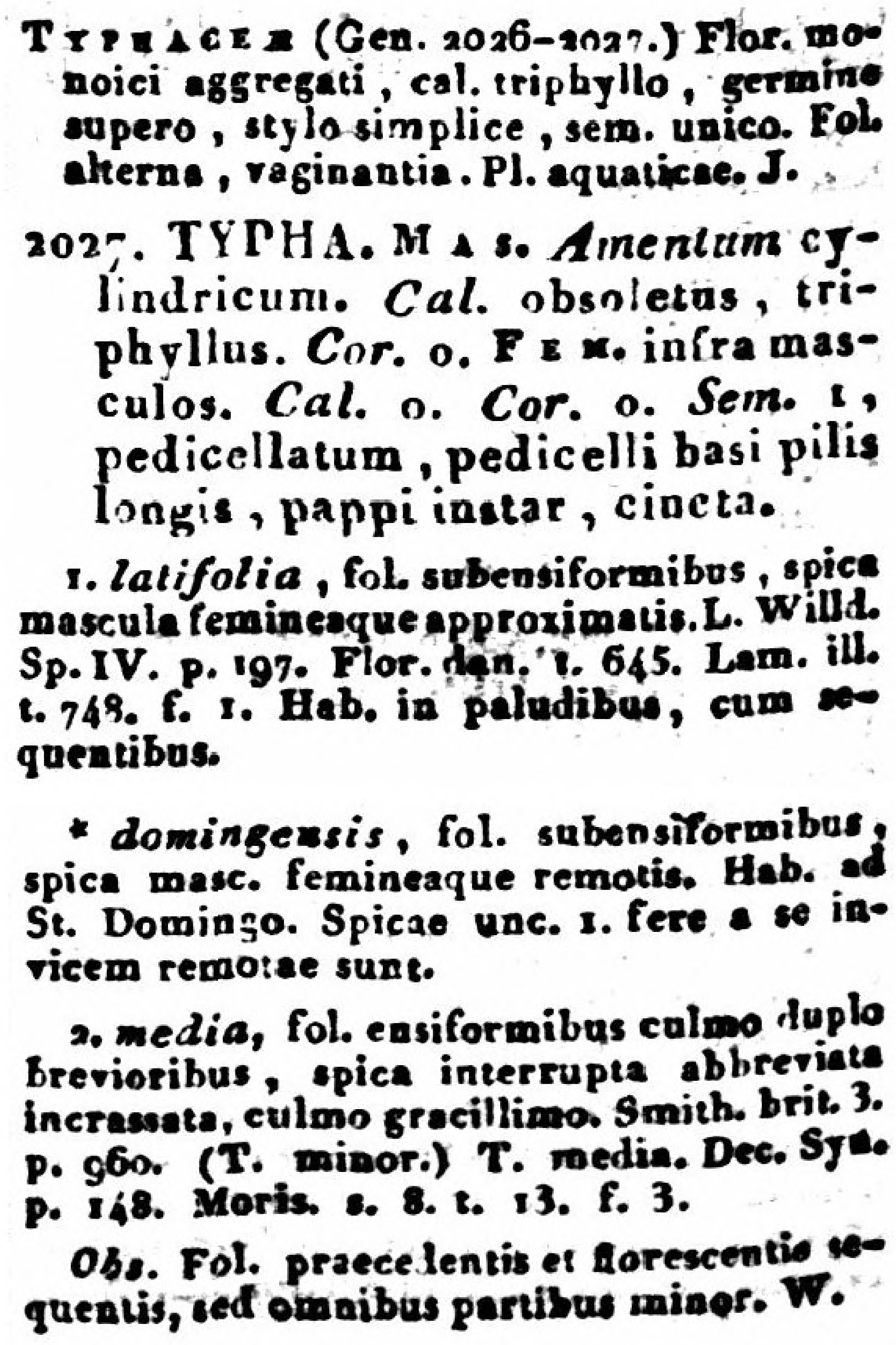


Figure 2. Location of the newly discovered population of *Typha domingensis* at The Wilds, Muskingum Co., Ohio.

The site where *Typha domingensis* was collected also contains clones of *T. angustifolia* and *T. latifolia*. In addition, clones were found that appear to be hybrids of *T. angustifolia* X *latifolia* (= *T.* x *glauca* Godr.), *T. angustifolia* x *domingensis*, and *T. domingensis* x *latifolia*. Such hybrids are not uncommon where cat-tail species intersect (Smith 1967), and hybrids between the native *T. latifolia* and invasive *T. angustifolia*, have been found in Nebraska and Kentucky (Smith 2000). This propensity to hybridization creates a great deal of confusion in the taxonomy of *Typha* species, and this population might prove a valuable resource for studies of hybridization among the species found in eastern North America.

Typha domingensis is very similar to other *Typha* species, which are rhizomatous perennial monoecious emergent aquatic herbs. The long slender green stalks have mostly basal leaves which are bifacial and distichous. Inflorescences are terminal and spike-like with staminate flowers above pistillate. Flowers are very small, dense and actinomorphic. The male perianth consists of bristle-like tepals, and scale or bristle-like tepals are found in female flowers. Flowers are wind pollinated, and the fruits are wind dispersed. The achene-like fruits have persistent perianths and contain albuminous starchy seeds. Notable differences between *T. domingensis* and other species include greater number of leaves, leaf width between 5 to 15mm when dry, and shoot height, which at 2.5-4 meters is often greater than other species. Stems are 3-4 mm thick and shoots are 1-2 cm thick in flower. There are numerous orange-brown mucilage glands covering the interior of the leaf sheath from where it meets the blade to the adjacent 1-10 cm of blade. The distance separating the staminate and pistillate inflorescences is between 1-8 cm (Fig. 2), and pollen grains are monads (Gleason & Cronquist 1991; Hotchkiss & Dozier 1949; Smith 2000; Thieret & Luken 1996). The chromosome number reported for the species is *2n*=30 (Smith 2000).

Southern cat-tail is known to form dense monotypic stands under brackish or nutrient rich conditions. Similar to its congeners, its prolific seed production and ability to propagate vegetatively allow for rapid spread. *Typha domingensis* contains phytotoxins which have the potential to inhibit growth and chlorophyll production of other plant species (Gallardo-Williams et al. 2002). Cat-tails provide habitat to wetland wildlife such as the red-winged blackbird, and can be an important food source for small and large mammals (Everitt et al. 1999). The pollen and rhizomes are also used as food sources by humans, and the leaves for paper and matting (Simpson 2010).



TYPHACEAE (Gen. 2026–2027.) Flor. monoici aggregati, cal. triphyllo, germine supero, stylo simplice, sem. unico. Fol. alterna, vaginantia. Pl. aquaticae. J.

2027. TYPHA. MAS. *Amentum* cylindricum. *Cal.* obsoletus, triphyllus. *Cor.* o. FEM. infra masculos. *Cal.* o. *Cor.* o. *Sem.* 1, pedicellatum, pedicelli basi pilis longis, pappi instar, cincta.

1. *latifolia*, fol. subensiformibus, spica mascula femineaque approximatis. L. Willd. Sp. IV. p. 197. Flor. dan. t. 645. Lam. ill. t. 748. f. 1. Hab. in paludibus, cum sequentibus.

* *domingensis*, fol. subensiformibus, spica masc. femineaque remotis. Hab. ad St. Domingo. Spicae unc. 1. fere a se invicem remotae sunt.

2. *media*, fol. ensiformibus culmo duplo brevioribus, spica interrupta abbreviata incrassata, culmo gracillimo. Smith. brit. 3. p. 960. (T. minor.) T. media. Dec. Syn. p. 148. Moris. s. 8. t. 13. f. 3.

Obs. Fol. praecedentis et florescentia sequentis, sed omnibus partibus minor. W.

Figure 3. Persoon's description of *Typha domingensis, Synopsis Plantarum* 2: 532. 1807. Image from Google Books.

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